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IS 11932 (1986): Recorded characteristics for magnetic sound on full coat 16 mm motion picture film [MED 32: Photographic Equipment]



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Bhartrhari—Nitiśatakam

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Indian Standard

RECORDED CHARACTERISTIC FOR
MAGNETIC SOUND ON FULL-COAT 16 mm
MOTION-PICTURE FILM

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

RECORDED CHARACTERISTIC FOR MAGNETIC SOUND ON FULL-COAT 16 mm MOTION-PICTURE FILM

Cinematographic Equipment Sectional Committee, ETDC 47

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Indian Standard

RECORDED CHARACTERISTIC FOR MAGNETIC SOUND ON FULL-COAT 16 mm MOTION-PICTURE FILM

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 26 November 1986, after the draft finalized by the Cinematographic Equipment Sectional Committee had been approved by the Electro-technical Division Council.

0.2 While preparing this standard, assistance was derived from ISO 1188-1984 'Cinematography — Recorded characteristic for magnetic sound on full-coat 16 mm motion-picture film — Specifications', issued by the International Organization for Standardization (ISO).

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies the recorded characteristic for magnetic sound records on 16 mm full-coat perforated magnetic film when used at the nominal speed of 24 frames (183 mm) per second, or 25 frames (190.5 mm) per second.

2. RECORDED CHARACTERISTIC

2.1 With constant sine-wave signal applied to the input of the recording system, the nominal characteristic in effective values of the short-circuit magnetic flux versus frequency shall fall with increasing frequency in conformity with the impedance of a parallel combination of a capacitance and a resistance having a time constant $t = 70 \mu\text{s}$.

*Rules for rounding off numerical values (revised).

2.2 The curve defined above is represented by

$$N = -10 \log_{10} (1 + 4\pi^2 f^2 t^2)$$

where

N = the recorded characteristic in decibels;

f = the frequency in hertz; and

t = the time constant in seconds.

2.3 Numerical values are given in Table 1.

TABLE 1 NUMERICAL VALUES OF THE RECORDED CHARACTERISTICS

FREQUENCY	N
Hz	db
40	0.13
50	0.13
63	0.13
80	0.12
100	0.12
125	0.12
160	0.11
200	0.10
250	0.08
315	0.05
400	0.00
500	- 0.07
630	- 0.19
800	- 0.37
1 000	- 0.64
1 250	- 1.01
1 600	- 1.61
2 000	- 2.36
2 500	- 3.31
3 150	- 4.52
4 000	- 5.99
5 000	- 7.53
6 300	- 9.25
8 000	-11.13
10 000	-12.95
12 500	-14.81
16 000	-16.90

NOTE — Numerical values of the recorded characteristics normalized to 400 Hz.

3. TOLERANCES

3.1 Magnetic sound records on films shall be recorded to the characteristic specified in 2 within the tolerances given in the Fig. 1.

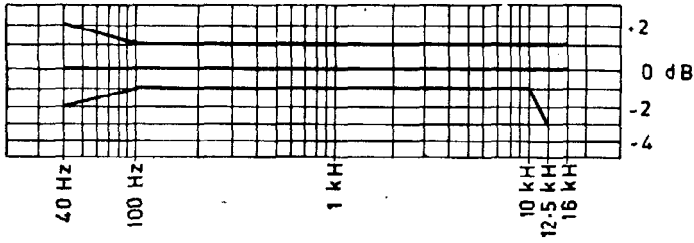


FIG. 1 TOLERANCES ON RECORDED LEVEL ON 16 mm FILM

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>	<i>Definition</i>
Force	newton	N	$1 \text{ N} = 1 \text{ kg}\cdot\text{m}/\text{s}^2$
Energy	joule	J	$1 \text{ J} = 1 \text{ N}\cdot\text{m}$
Power	watt	W	$1 \text{ W} = 1 \text{ J}/\text{s}$
Flux	weber	Wb	$1 \text{ Wb} = 1 \text{ V}\cdot\text{s}$
Flux density	tesla	T	$1 \text{ T} = 1 \text{ Wb}/\text{m}^2$
Frequency	hertz	Hz	$1 \text{ Hz} = 1 \text{ c}/(\text{s}^{-1})$
Electric conductance	siemens	S	$1 \text{ S} = 1 \text{ A}/\text{V}$
Electromotive force	volt	V	$1 \text{ V} = 1 \text{ W}/\text{A}$
Pressure, stress	pascal	Pa	$1 \text{ Pa} = 1 \text{ N}/\text{m}^2$